

## PRICE EARNINGS RATIO AND FINANCIAL PERFORMANCE NEXUS USING PANEL DATA REGRESSION MODEL: THE CASE OF OMAN

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### ABSTRACT

*The market price of the equity tends to be adjusted over time due to various domestic and international economic reasons. Apart from macro-economic rationale, the market price of the equity in emerging and developed markets is determined based on the fundamental financial performance of the specific industry or company. In this direction, a simple panel data regression model (Fixed Effect Model & Random Effect Model) is used to capture the price dependence on various financial ratios such as net profit ratio, returns on equity and earnings per share. The model appropriateness has been tested using huasman test. The descriptive validity of the model is illustrated for a set of financial variables extracted from the financial statements of 36 listed companies in Muscat security market for the period of seven years (2008-2014). The findings conclude that there is a well-built dependence between price of the equity and the net profit ratio.*

**KEYWORDS:** Price Earning Ratio, Panel Data Regression, Fixed Effect Model, Random Effect Model, Hausman Test

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### INTRODUCTION

At present there are 119 companies listed in Muscat Security Market (MSM) Shariah Index which are grouped under financial sector (36-Compnies), service sector (36-companies) and industrial sector (47-companies). Approximately 78318 people (30356 Omanis and 47962 expatriates) are employed at various levels in these three sectors out of which 21504 (3961 Omanis & 21504 Expats) people are working only in Gal far Engineering & Contracting SAOG. The performance of all the three sectors began declining in 2014; especially the service and industrial sectors realized negative growth. The growth rate of total income, net profit, net worth, dividend and market capitalization of all the three sectors during 2011-2014 is 5.72%, 17.41%, 12.57% and 11.16% (Total Income – Financial Sector) -13.02%, 39.33%, 19.54% and 1.35% (Net Profit – Financial Sector) 5.88%, 22.23%, 22.47% and 7.98% (Net Worth – Financial Sector) 6.57%, 10.58%, 14.65%, and 10.94% (Dividend – Financial Sector) -9.22%, 3.76%, 21.63% and -1.12% (Market Capitalization– Financial Sector) -2.08%, 20.57%, 8.94% and 4.62% (Total Income – Industrial Sector) -26.33%, 34.09%, 10.45% and -5.20% (Net Profit – Industrial Sector) 5.46%, 7.59%, 10.37% and 4.95% (Net Worth – Industrial Sector) -17.25%, 20.36%, 1.97% and 4.87% (Dividend – Industrial Sector) 18.95%, 31.21%, 34.08% and -16.26% (Market Capitalization– Industrial Sector) 5.10%, 4.07%, 10.24% and 3.61% (Total Income – Service Sector) -12.32%, 3.54%, 28.40% and -1.87% (Net Profit – Service Sector) 5.30%, 3.06%, 28.90% and 4.91% (Net Worth – Service Sector) 0.52%, 12.84%, 13.02% and 1.04% (Dividend – Service Sector) -4.38%, -1.89%, 20.52% and 10.61% (Market Capitalization– Service Sector). The performance of key indicators has drastically declined in 2014 compared to 2013. In these crucial circumstances, the Oman government is in the position to implement certain tough financial and investment decisions to manage the

current financial turmoil. Firstly, cutting the, nation's largest cash out flow, current expenditure (9.6 billion OMR) to the possible extent. Secondly, financing the project and infrastructure investment (3.2 billion OMR) through privatization and issuing government bonds, thirdly, enhancing the growth and performance of non-hydrocarbon industries to contribute incremental revenue during the crisis. Apart from these Oman has strong fundamental strength including the stable macro economy, the efficient infrastructure, the economic and investment legislations, the solid growth of non-oil sectors, the financial stability as represented by the safe public finances, banking system, the monetary policy and the stable local currency make the Sultanate capable of confronting these challenges with great confidence.

Table 1

| Financial Sector Performance         |              |        |            |        |           |        |            |        |
|--------------------------------------|--------------|--------|------------|--------|-----------|--------|------------|--------|
| Year                                 | Total Income | Growth | Net Profit | Growth | Dividend  | Growth | MC         | Growth |
| 2014                                 | 1040042000   | 11.16  | 416523000  | 1.35   | 248007000 | 10.94  | 4032164000 | -1.12  |
| 2013                                 | 935603000    | 12.57  | 410977000  | 19.54  | 223549000 | 14.65  | 4077713000 | 21.63  |
| 2012                                 | 831134000    | 17.41  | 343790000  | 39.33  | 194977000 | 10.58  | 3352418000 | 3.76   |
| 2011                                 | 707920000    | 5.72   | 246745000  | -13.02 | 176315000 | 6.57   | 3230849000 | -9.22  |
| 2010                                 | 669648000    | NA     | 283690000  | NA     | 165445000 | NA     | 3559051000 | NA     |
| Overall Listed Companies Performance |              |        |            |        |           |        |            |        |
| Year                                 | Total Income | Growth | Net Profit | Growth | Dividend  | Growth | MC         | Growth |
| 2014                                 | 2565184000   | 6.68   | 842197000  | -0.80  | 531565000 | 6.02   | 9262941000 | -0.11  |
| 2013                                 | 2404662000   | 10.97  | 849031000  | 21.13  | 501405000 | 11.95  | 9273197000 | 23.61  |
| 2012                                 | 2166955000   | 10.82  | 700935000  | 23.72  | 447889000 | 12.98  | 7502141000 | 5.78   |
| 2011                                 | 1955340000   | 4.43   | 566528000  | -15.05 | 396447000 | -0.20  | 7092322000 | -9.10  |
| 2010                                 | 1872446000   | NA     | 666901000  | NA     | 397245000 | NA     | 7802549000 | NA     |

Source: Annual Companies Guide

## REVIEW OF LITERATURE

**Aminul Islam (2014)** measured the financial performance of National Bank Limited for the period of six years from 2008-2013. The result concluded that the improvement of bank depends on policies. **Pooja Sharma (2014)** compared the financial performance of SBI and ICICI Bank using various ratios. The results depicted that ICICI bank is performing better than SBI bank as it is able to generate more loans from its deposits to the customers. **Abdel- Rahman and Dalabeeh (2013)** analyzed the financial statements for five years and recommended to provide qualified employees; scientifically and practically to do the work of the company. **Ivica Pervan (2013)** focused on banking sector regarding approving loans for firms which is related credit risk and collateral. The paper concluded that predictors use financial ratios, while in the real life banks combine financial and nonfinancial variables. **Shahid Munir (2012)** compared the financial performance of Pakistan public sector banks and to rank them according to the selected financial indicators. It concluded that the ranking of public sector differ as the financial measures or ratio differs. **Hemanta Saikia (2012)** studied the impact of technology on financial performance. The result showed that without assured factor combination and proper technology, industrial sector cannot flourish. **Florenz C. Tugan, (2012)** studied about the listed firms Belonging to the Education Subsector in the Philippines. The study provided a mixed findings that the sample firm are ranked differently under different parameters. **Amalendu Bhunia (2011)** studied the financial strengths and weaknesses of the Indian public sector pharmaceutical enterprises listed on BSE for the period of twelve years from 1997-98 to 2008. It concluded that the financial stability of the selected companies has showed a downward trend and consequently the financial stability of selected pharmaceutical companies has been decreasing at an intense rate. **Doron Nissim (2011)** outlined a bench marking of historical forecasting for different values with various ratios documented for the period 1963–1999, along with their cross-sectional variation and correlation. It concluded that the time series behavior of many of the ratios is described and their typical “long-run, steady-state” levels are documented.

**Mabwe(2010)** tested the performance of South Africa's commercial banking sector for the period 2005- 2009. The study concluded that overall bank performance increased considerably in the first two years of the analysis a drastic change in trend is identified at the onset of the global financial crisis in 2007, reaching its peak during 2008-2009. **Griffin, Jennifer J; Mahon, John F (1997)** concerned the relationship between corporate social performance and corporate financial performance using KLD index and Fortune reputation survey from TRI database. The results indicated that the measure actually predetermine the corporate social performance and corporate financial performance. **Venkat Raman and Ramanujam(1996)** studied about financial versus operational criteria and primary versus secondary sources of data. The results highlighted the advantages and limitations of different measurement approaches, data analytic issues and their implication for operationalizing business performance.

## STATEMENT OF PROBLEM

The financial sector is considered to be the key sector with more than 40% market capitalization of Oman equity market. The Oman economy is a conservative economy maintaining robust economic fundamentals such as lower inflation, currency stability, lower fiscal deficit, lower debt GDP ratio, higher percapita income and adequate foreign current reserves. It an infant and emerging market compared to west and few leading Asian markets, and considered to be the key competitor in the Middle East witnessing the total trade of 2,268,748,228 OMR in 2014 comprising 79.43% Omanis, 7.34% GCC nationals, 1.82% Arabs and 11.41% foreign nationals. Around 4/5 of the investors are local nationals hardly 11.41% foreign investors participate in equity trading. Out of 79.43% Omanis 51.36% constitutes institutions and the remaining 28.07% is individuals. <sup>1</sup>It is observed that around 80% equity investment is tapped within Oman in which half of it is institutional investment but the individual participation in equity market is in respectable level. The overview of Oman economy and growth, development of equity market, and active participation of individual and institutional investors motivated and crafted a necessity to study the impact of fundamental financial performance on the price of the equity adopting panel data regression model.

## OBJECTIVES

- To study about the Oman economy and the performance of financial sector during 2008-2014 in Oman.
- To investigate the impact of various ratios on price earnings ratio using panel data regression (Fixed Effect and Random Effect Model)
- To interpret the test results and draw a valid conclusion for the study.

## HYPOTHESIS

### Significance testing

$H_0$  : Existence of significant relationship is not found between net profit ratio and price earnings ratio

$H_a$  : Existence of significant relationship is found between net profit ratio and price earnings ratio

$H_{01}$  Existence of significant relationship is not found between return on equity and price earnings ratio

$H_{a1}$  Existence of significant relationship is found between return on equity and price earnings ratio

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<sup>1</sup> Annual Statistical Bulletin - 2014

$H_{02}$  : Existence of significant relationship is not found between earnings per share and price earnings ratio

$H_{a2}$  : Existence of significant relationship is found between earnings per share and price earnings ratio

### Diagnostic Testing

$H_0$  : Random Effect model is appropriate for predicting the relationship

$H_a$  : Random Effect model is not appropriate for predicting the relationship

### RESEARCH METHODOLOGY

The sample data used in the study consists of four ratios (net profit ratio, price earnings ratio, return on equity, and earnings per share ) comprise of 210 observations from 30 companies listed in the financial index compiled and published by Muscat security market companies guide 2013,2014 and 2015 for the period from 2008 to 2014 consist . To investigate the impact of profitability and market ratios on the price earnings ratio, the data has been analyzed using panel data regression adopting both fixed and random effect method. Besides the model appropriateness was tested using hausman test. The complete analysis was carried out in e-views software.

### RESULTS AND DISCUSSIONS

Table 2

| Fixed Effect Panel Data Regression Results |             |                       |             |          |
|--------------------------------------------|-------------|-----------------------|-------------|----------|
| Dependent Variable: Price Earnings Ratio   |             |                       |             |          |
| Variable                                   | Coefficient | Std. Error            | t-Statistic | Prob.    |
| Constant                                   | -0.00246    | 0.013231              | -0.18552    | 0.853    |
| Net Profit Ratio                           | 0.603203    | 0.081792              | 7.374807    | 0        |
| Return on Equity                           | -2.85E-05   | 0.000146              | -0.19532    | 0.8454   |
| Earnings per share                         | 0.0028      | 0.00394               | 0.710741    | 0.4782   |
| Effects Specification                      |             |                       |             |          |
| Cross-section fixed (dummy variables)      |             |                       |             |          |
| R-squared                                  | 0.343651    | Mean dependent var    |             | 0.033393 |
| Adjusted R-squared                         | 0.224315    | S.D. dependent var    |             | 0.203217 |
| S.E. of regression                         | 0.17898     | Akaike info criterion |             | -0.45915 |
| Sum squared resid                          | 5.63794     | Schwarz criterion     |             | 0.068588 |
| Log likelihood                             | 80.98106    | Hannan-Quinn criter.  |             | -0.24578 |
| F-statistic                                | 2.879686    | Durbin-Watson stat    |             | 1.582462 |
| Prob(F-statistic)                          | 0.000005    |                       |             |          |

Source: Data Anaysis

Table 3

| Random Effect Panel Data Regression Results |             |            |             |        |
|---------------------------------------------|-------------|------------|-------------|--------|
| Dependent Variable: Price Earnings Ratio    |             |            |             |        |
| Variable                                    | Coefficient | Std. Error | t-Statistic | Prob.  |
| Constant                                    | 0.001386    | 0.013034   | 0.1063      | 0.9154 |
| Net Profit Ratio                            | 0.541263    | 0.070832   | 7.641496    | 0      |
| Return on Equity                            | -4.73E-05   | 0.000133   | -0.35569    | 0.7224 |
| Earnings per share                          | 0.00245     | 0.003576   | 0.685082    | 0.4941 |
| Effects Specification                       |             |            |             |        |
|                                             |             |            | S.D.        | Rho    |

|                       |          |                    |          |
|-----------------------|----------|--------------------|----------|
| Cross-section random  |          | 0                  | 0        |
| Idiosyncratic random  |          | 0.17898            | 1        |
| Weighted Statistics   |          |                    |          |
| R-squared             | 0.238616 | Mean dependent var | 0.033393 |
| Adjusted R-squared    | 0.227474 | S.D. dependent var | 0.203217 |
| S.E. of regression    | 0.178615 | Sum squared resid  | 6.54017  |
| F-statistic           | 21.41555 | Durbin-Watson stat | 1.379153 |
| Prob(F-statistic)     | 0        |                    |          |
| Unweighted Statistics |          |                    |          |
| R-squared             | 0.238616 | Mean dependent var | 0.033393 |
| Sum squared resid     | 6.54017  | Durbin-Watson stat | 1.379153 |

Source: Data Anaysis

Table 4

| Correlated Random Effects - Hausman Test |                   |              |        |
|------------------------------------------|-------------------|--------------|--------|
| Test Summary                             | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob.  |
| Cross-section random                     | 3.043626          | 3            | 0.3849 |

Source: Data Anaysis

The above results were obtained from data analysis. It shows that Coefficient of Determination -  $R^2$  0.343651 in fixed effect model (FEM) and 0.238616 in random effect model (REM) which means the independent variable net profit ratio, return on equity ratio and earnings per share are jointly influencing the price earnings ratio in Oman equity market by 34% and 23% respectively. The p-value of F-Statistic is 0.0000 indicating the model is fit for the overall population. The results of probability significance of individual independent variables are 0.0000 (FEM) 0.0000 (REM) (Net profit ratio), 0.8454 (FEM) 0.7224 (REM) (Return on equity ratio), and 0.4782 (FEM) 0.4941 (REM) (Earning per share). The p-values imply that the net profit ratio is the only significant variable impacting the dependent variable price earning ratio. The other two variables are insignificant with the p-value of more than 5%. Both the fixed effect model (FEM) and random effect model (REM) found that the net profit ratio is the significant variable. The null hypothesis  $H_0$  : and the alternative hypothesis  $H_{a1}$  and  $H_{a2}$  : are rejected. Eventually, to test the model appropriateness, hausmantest was adopted. The calculated p-value of husman test is 0.3849 which is larger than 5%, so the null hypothesis  $H_0$  : is accepted and the random effect model (REM) is considered to be the best model to predict the linear relationship between dependent and independent variables.

## CONCLUSIONS

The literature review has enumerated the predominant role of financial performance in the growth of firms as well as the gross domestic production of the nations especially the developing nations. In this connection, the present study has empirically analyzed and found the existence of the linear relationship between the dependent and independent variables having applied fixed effect and random effect panel data. Hence, it is concluded that there is a positive relationship between net profit ratio and price earnings ratio in Oman during the study period.

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